MULTIMEDIA UNIVERSITY

STUDENT IDENTIFICATION NO

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FINAL EXAMINATION

TRIMESTER 1, 2019/2020

BKC3034 – BUSINESS SYSTEMS ANALYSIS AND DESIGN

(All sections / Groups)

21 OCTOBER 2019
2:30 p.m – 4:30 p.m
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This paper consists of 6 pages with **TWO** sections only.
2. Answer **ALL** questions in Section A and Section B. The distribution of marks for each question is given.
3. Please write all your answers in the Answer Booklet provided.

SECTION A: CASE STUDY

Answer ALL questions.

Tri-State Heaing Oil: Juggling Priorities to Begin Operation

It was 8:30 on Monday morning, and Maria Grasso, Kim Song, Dave Williams, and Rajiv Gupta were just about to begin the weekly project status review meeting. Tri-State Heating Oil had started developing a new customer order and service call scheduling system five months earlier. The target completion date was 10 weeks away, but the project was behind schedule. Analysis and design had taken eight weeks longer than anticipated because key users had disagreed on what new system requirements to include and the system scope was larger than expected.

Maria began the meeting by saying, "We've gained a day or two since our last meeting due to better-than-expected unit testing results. All of the methods developed last week sailed through unit testing, so we won't need any time this week to fix errors in that code."

Kim spoke, "I wouldn't get too cocky just yet. All of the nasty surprises in my last project came during integration testing. We're completing the user-interface classes this week, so we should be able to start integration testing with the business classes sometime next week."

Dave nodded enthusiastically and said, "That's good! We have to finish testing those user-interface classes as quickly as possible because we're scheduled to start user training in three weeks. I need that time to develop the training materials and work out the final training schedule with the users."

Rajiv replied, "I'm not sure that we should be trying to meet our original training schedule with so much of the system still under development. What if integration testing shows major bugs that require more time to fix? And what about the unfinished business and database classes? Can we realistically start training with a system that's little more than a user interface with half a system behind it?"

Dave replied, "But we have to start training in three weeks. We contracted for a dozen temporary workers so that we could train our staff on the new system. Half of them are scheduled to start in two weeks and the rest two weeks after that. It's too late to renegotiate their start dates. We can extend the time they'll be here, but delaying their starting date means we'll be paying for people we aren't using.".

Maria said, "I think that Rajiv's concerns are valid. It's not realistic to start training in three weeks with so little of the system completed and tested. We're at least five weeks behind schedule, and there's no way we'll recapture more than four or five days of that during the next few weeks. I've already looked into rearranging some of the remaining coding to give priority to the work most critical to user training. There are a few batch processes that can be back-burned for awhile. Kim, can you rearrange your test plans to handle all of the interactive applications first?"

Continued...

Kim replied, "I'll have to go back to my office and take another look at the dependencies among those programs. Offhand, I'd say yes, but I need a few hours to make sure."

Maria replied, "Okay, let's proceed under the assumption that we can rearrange coding and testing to complete a usable system for training in five weeks. I'll confirm that by e-mail later today as soon as Kim gets back to me. I'll also schedule a meeting with the CIO to deliver the bad news about temporary staffing costs."

After a few moments of silence, Rajiv asked, "So what else do we need to be thinking about?"

Maria replied, "Well, let's see... There's user documentation, hardware delivery and setup, operating system and DBMS installation, importing data from the old database, the network upgrade, and stress testing for the distributed database accesses."

Rajiv smiled and said to Maria, "You must have been a juggler in your youth, and it was good practice for keeping all of these project tasks up in the air. Does management pay you by the ball?"

Maria chuckled and replied, "I do think of myself as a juggler sometimes. And if management paid me by the ball, I could retire as soon as this project is finished!"

Source: J. Satzinger, R. Jackson, & S. Burd, *Systems Analysis & Design in a Changing World*, 5th ed., 2010.

QUESTION 1

a. Assume that Maria is the project manager for the project mentioned in the case. As the project manager, she has internal and external responsibilities. List down **TWO (2)** responsibilities under each of the internal and external responsibilities.

(4 marks)

b. Define *ceremony* under the context of project management. In your opinion, which type of ceremony does Maria, Kim, and Dave engaged in? Justify your answer.

(8 marks)

c. Based on the case, assume that the delay in the analysis and design stage was due to *scope creep*. What does this mean? Provide **ONE (1)** solution to prevent scope creep.

(4 marks)

d. Testing activities are key parts of implementation and deployment. Describe different types of test mentioned in the case that the development team had and will be performing.

(9 marks)

(Total: 25 marks)

Continued...

SECTION B: ESSAYS

Answer ALL questions.

QUESTION 2

a. System analysts uses analysis and design techniques to solve business problems by using information technology. List **TWO (2)** example of problems that an organization faces that leads to the solution of developing a new system. List the steps that a system analyst takes to solve a problem.

(6 marks)

b. One of the general approaches to the system development life cycle is the adaptive approach that uses the iterative development. Two other adaptive concepts emerged from the iterative development – incremental development and walking skeleton. Differentiate between the development approaches taken for *iterative*, *incremental*, and *walking skeleton*.

(6 marks)

c. Define *hosting alternatives*, a term used in the design for external deployment of a system. One of the popular alternatives for hosting is managed services. Describe *managed services* and provide **ONE (1)** advantage to this approach.

(8 marks)

(Total: 20 marks)

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QUESTION 3

a. Describe the differences taken by *transaction analysis* and *transform analysis* in developing a structure chart.

(8 marks)

b. The trade-offs among data correctness, completeness, accessibility, and security are complex issues that must be addressed with a carefully designed system of controls and security measures. One important category of controls is integrity control. Define *integrity control* and describe **TWO (2)** control examples that falls under this category.

(8 marks)

c. One of the trends in application software availability is software as a service (SAAS). Explain what SAAS is and briefly describe the **TWO (2)** categories under SAAS.

(9 marks)

(Total: 25 marks)

Continued...

QUESTION 4

a. Read the narrative below of a booking of appointment in a clinic:

When a new patient comes into a clinic, the patient has to submit a patient application form. This will be used to create the patient's record and will be stored in the patient records file. The patient then makes an appointment by providing his/her details. An appointment card is given to the patient after he/she has made the appointment and the details of the appointment is stored in the appointment database.

A patient is also allowed to book for an appointment via telephone. In such cases, the receptionist will make the appointment booking by entering the patient's details. The receptionist also handles any cancellation of appointments of a patient. Any booking or cancellation of appointment will update the appointment section of the database.

When the doctor meets a patient, the doctor will be provided with the patient's appointment and personal records. At the end of the visit, the doctor issues a prescription by entering the prescription details into the system, which will update both the prescription and patient files. The prescription list will also be handed to the patient.

Develop a **logical level-0 DFD** for the above process.

(12 marks)

b. Read the narrative below for the payment process by insurance in Hospital X:

Patient approaches the cashier to make payment for the visit to the hospital. Cashier will enquire from patient whether he has an insurance coverage. If the patient is covered by insurance, the cashier checks the patient's policy to determine if the policy covers the medical service that the patient received. If the policy covers the service, the patient is to fill the insurance form. The cashier then checks whether the form has been filled correctly, else the form will be returned back to the patient to be corrected. When the form has been completed correctly, the patient will need to pay the deductibles by card or cash. The casher will record the payment made before printing the receipt. The receipt, along with the insurance copy is then given to the patient. In the event where the patient does not have an insurance or the insurance policy did not cover the service received, the patient will have to pay by card or cash.

Develop an **activity diagram** for the workflow described above.

(8 marks)

Continued...

c. Read the scenario described below for passenger service to check-in in an airport:

The passenger can choose between a normal check-in, automated check-in, and express check-in. During check-in, express check-in, and automated check-in, the boarding pass is issued. The passenger walks to the gate and presents his or her boarding pass. The check-in representative can perform a regular check-in, but is not able to perform express check-in and automated check-in.

Baggage transportation is responsible for loading luggage into the airplane. Ten minutes before a flight leaves, baggage transportation requests a passenger list from passenger service, which includes every passenger who checked in, but did not board the airplane. On the basis of this list all affected luggage will be unloaded again from the airplane. If the flight is an international flight, the customs authorities of the country in which the destination airport is located also request a passenger list.

Draw a **use case diagram** that contains all actors, use cases and their relationship from the scenario described above.

(10 marks)

(Total: 30 marks)

End of Paper